



MINISTRY OF JIHAD-E-AGRICULTURE
Agricultural Research, Education and Extension Organization
Agriculture and Natural Resources Research and Education Center of Yazd

A survey on production performance and economic efficiency of industrial dairy farms in Yazd Province

Research worker: Ahmad Bitaraf

Abstract

This was aimed to investigation the production performance and economic efficiency of industrial dairy farms in order to evaluate the current status and problems in Yazd Provinc. Three projects were performed from Dec 2016 to Jan 2017 by filling out questionnaires and registration of data in dairy farms of Yazd.

A. In project with the title of Comparison of milk production and hygiene status between dairy cows reared at free stall and open shed housing systems in Yazd province, the production and reproduction performances as well as milk hygiene condition of Holstein dairy cows in this two systems, in 14 Holstein dairy herds of similar feeding and milking systems and reproduction protocols (seven open housing systems vs. seven free stall systems), were investigated. Cow comfort indices (including the No. of lying, standing and ruminating cows along with No. of ruminations/min in houses) were recorded by an expertise. Data of cullings, cows with clinical mastitis signs, manure and locomotion scores, claws and hock lesion scores and the No. of lame cows were recorded and statistically analysed. The data of reproduction along with daily and monthly milk yield, based on days in milk, were recorded also.

The percentage of standing cows in free stall system (FS) and open housing system, OLS was 3.0 vs. 7.9 and the percentage of barn occupation and lying cows in FS and OLS was 72.3, 61.8 vs. 69.3, 51.7 ($P<0.05$). Percent of lame, wounded and over grown claws cows were 6.92, 3.48, 5.83 and 5.00, 2.20 3.98 respectively ($P<0.05$). Average milk production in FS was approximately 2.5 times higher than OLS($P<0.05$). Body cleanliness score and the udder score were 1.70, 1.67 and 2.71, 1.41 respectively ($P<0.05$).

SCC in summer time was 135.1 and 178.7 respectively ($P<0.05$). Culling at first 60 days from calving along with yearly culling were 15.48, 31.1 and 25.80, 38.7 respectively ($P<0.05$).

Higher cow conception rate and lower days to first service were 8.51, 69.50 and 8.45, 83.71 respectively ($P<0.05$). At 120 days from calving, the serum concentrations of Non Sterified Fatty Acids

(NEFA) and β -Hydroxy Butyric Acid (BHBA) were 991.3, 911.3 and 845.1, 843.2 respectively ($P < 0.05$).

According to the overall findings of the present study, we suggest the farmers substitute open housing systems with free stall barns in Yazd province.

B. In project with the title of Current status determination of production and reproductive norms in dairy farms under supervision of specification and record registration in Yazd province, some reproductive norms such as herd distribution, pregnancy status of dairy cows and heifers (35.7 and 59.3 percent), average pregnancy rate in cows (15.3), the first AI and calving age (16.7 and 28.8 months), the dose of endemic and imported semen used in flocks (31.1 and 68.9 percent) were measured. The percentages of total mortality in heifers and cows and in flock (13.1, 9.7 and 11.4), voluntary and compulsory rate of cullings in mature cows (13.8 and 86.2), the heifers inseminated below and above the 15 months of age (85.6 and 14.4), calving interval, abortion rate above three months (341 days and 10.9 percent) and the average annual and first lactation period milk production (32.9 and 31.4) were measured.

According to the results, we conclude that the status of production along with reproduction in studied heds were under the optimum norms, suggesting active solutions must be applied to standardize them.

C. In project with the title of an estimation of overall productivity, efficiency and scale output in industrial dairy cattle farms of Yazd province, the productivity of the all production factors such as dairy farm owners, the No. of typical dairy farms, the history of managers acticity, the milk mproduction per each cow and farm and the expense share of each factor in production were measured and then the productivity and the efficiency scale and the effect of all engaged factors was calculated.

According to the results of this study, allocation of appropriate financial resources for the development of the scale of production units and increasing the total factor productivity, as well as the modeling of productive units in the province, are proposed to improve performance indicators in other units.

According to the overall findings of the present study, we suggest the farmers substitute open housing systems with free stall barns in Yazd province.

KeyWords: Industrial dairy cow, Production performance, Reproduction performance, Economical efficiency, Yazd province